



Empowering students! How teachers can use wise interventions to encourage good performance

Summary

How can teachers support all children, regardless of their background? The effectiveness of two teaching intervention strategies were tested as part of a research practice project: values affirmation and growth mindset. This study reports the key findings. The study also resulted in a handbook. The handbook contains background information about the interventions as well as teaching and teacher-training materials.

Students sense when their background lowers others' expectations of their performance. This phenomenon is referred to as stereotype threat. Pupils who experience such a threat are more anxious and more likely to blank out in examination situations and, as a result, to underachieve.

Wise interventions can help school students to have more confidence in their ability and thereby mitigate the negative impact of stereotype threat on performance. Numerous studies have demonstrated the impact of wise interventions and have shown that they empower school students to realise their potential. In 2017, the SVR Research Unit was able to show that young people of Turkish and Arab origin achieved significantly better results in mathematics after taking part in the values affirmation intervention.

However, implementing psychological interventions in practice is challenging. In subsequent replication studies the effects are often substantially smaller. There are a number of reasons for this; e.g., differing school settings and student bodies. However, outcomes also depend on how closely teachers comply with the instructions they have been given. The SVR scientific staff therefore carried out a large-scale effectiveness study for two wise interventions: The study looked at whether performance in mathematics still improved when previously trained teachers carried out these interventions independently in the classroom.

The study was conducted in fifth-year classes, i.e. in the first year of secondary schooling. With the support of Bezirksregierungen (administrative districts of a German federal state) in Arnsberg and Düsseldorf it was possible to recruit fifteen grammar schools (*Gymnasien*), comprehensive schools (*Gesamtschulen*) and lower secondary schools (*Hauptschulen*) in the Ruhr region for the study. In each case, students from classes in an entire school year cohort took part. Previously trained mathematics teachers were given a completely free hand in carrying out the wise interventions. The research team monitored implementation with a longitudinal study over an entire school year and with randomised control groups. This was to ensure that any changes could be unambiguously ascribed to the interventions. The analyses are based on information from 889 students in 51 classes.

The results show that highly threatened children who participate in values affirmation or whose teachers take part in growth mindset training outperform children in a control group in a standardised maths test taken at the end of the first school term. The difference in the case of values affirmation was almost 5 percentage points (Cohen's $d = 0.28$) and in the case of growth mindset almost 4 percentage points (Cohen's $d = 0.22$). Children who experience less of a threat or none at all did not show these effects.

The children received significantly less teaching between the second and third measurement wave as a result of the summer holidays and the Corona pandemic. The impact of the values affirmation on the

school children's performance waned during this period. However, the impact of interventions used by teachers trained in using the growth mindset increased. At the beginning of the sixth year of school, the relevant children were up to 9 percentage points (Cohen's $d = 0.40$) better than those in the control group.

Both wise interventions proved to be effective in practice. As a result, they would be appropriate for use in classrooms. These interventions can therefore support the achievement of students who are particularly threatened by negative stereotypes and help them to demonstrate their abilities. The results and the conclusions drawn from them also provide evidence of how they can be most effectively implemented:

Implement the interventions in challenging lessons: Values affirmation is effective when students are given sufficient encouragement and the opportunity to show what they can do.

Keep all students in mind: All students should feel that they are being asked to perform to the best of their abilities. This also applies to self-confident and high-achieving students.

Implement the interventions as instructed: Both interventions must fulfil certain prerequisites. In order to be effective, they must be implemented in a particular way.

Teacher training therefore plays a critical role. Interventions can be used effectively on an ongoing basis in schools. However, for this to be successful, they must be part of a school's overall strategy and combined with theory, testing out and reflection in a team. Support from the school administration and management is also key to success. Wise interventions can play an important role in helping teachers to respond to diversity in the classroom and can promote equal opportunities.